



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,285	10/03/2005	Manfred Heckmann	12810-00146-US1	2063
23416 7590 09/30/2008 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899				
EXAMINER				
WU, IVES J				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
09/30/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/552,285

**Applicant(s)**

HECKMANN ET AL.

**Examiner**

IVES WU

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 1/3/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- (1). **Claim 9** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "aromatic dialkyl ester A)" in claim 1. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
- (2). **Claims 1-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Janzen et al (DD 145540A).

As to a process for purifying and cooling a gas stream comprising a dialkyl ester A) of an aromatic dicarboxylic acid, which comprises treating the gas stream with an aliphatic dihydroxy compound B) at above the melting point of dialkyl ester A) in a 1<sup>st</sup> stage in **independent claim 1**, Janzen et al (DD 145540A) disclose method and device for the reuse and recovery of dimethyl terephthalate sublimate (Title). It pertains a method and device for separator and recovery of

dimethylterephthalate sublimate. In the case of manufacturing of polyethylene terephthalate with the help of a conventional discontinuous and continuous method, the sublimate of dimethyl terephthalate is accumulated over the course of melting and intermediate storage. Dimethyl terephthalate is precipitated or dissolved in a sublimate separator consisting of several chambers and provided with a glycol lock (seal), while volatile particles which are carried along or entrained, e.g. water are injected in a water separator connected in series. When changing loading of the reaction vessels, the glycol is guided through dimethyl terephthalate sublimate separator, and proportionated with dimethyl terephthalate into the reaction vessel. The dimethyl terephthalate sublimate separator consists of 3 chambers whereby one of outer chambers is provided with heated-deaeration pipeline, the other outer chamber is provided with mixture discharge pipeline, and central chamber is provided with glycol proportionating pipeline, having a distribution disk, inert gas proportioning pipeline, and a heated dimethyl terephthalate sublimate pipeline (Abstract). The glycol which is used as blocking liquid is having a temperature of 20 to 160° C, preferably 110 to 130°C (Claim 1 of DD 145540A), which reads on the limitations of instant claim.

As to treating the gas stream with an aliphatic dihydroxy compound B) at above the melting point of the dihydroxy compound B) in at least one 2<sup>nd</sup> stage in the process in **independent claim 1**, it would be obvious to have 2<sup>nd</sup> stage with same treatment of 1<sup>st</sup> stage because duplication of parts render obvious. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

As to dialkyl ester A) to be an ester of terephthalate acid, isophthalic acid, 2,6-naphthalene dicarboxylic acid or a mixture thereof in **claim 2**, dialkyl ester A) having alkyl radicals from 1 to 4 carbon atoms in **claims 3 and 10**, dialkyl ester A) to be dimethyl terephthalate in **claims 7 and 20**, Janzen et al (DD 145540A) disclose dimethyl terephthalate (Abstract).

As to gas stream which is purified and cooled to be a laden inert gas stream in **claims 4 and 11-12**, Janzen et al (DD 145540A) disclose inert gas pipeline which comes in the DMT sublimate separator and to the dimethyl terephthalate back to DMT sublimate separator in Figure, which reads on the limitations of instant claim.

As to dihydroxy compound B) used to be a diol having from 2 to 6 carbon atoms in **claims 5 and 13-15**, Janzen et al (DD 145540A) disclose glycol (Abstract).

As to dihydroxy compound B) used to be 1,4-butanediol in **claims 6 and 16-19**, Janzen et al (DD 145540A) disclose glycol which is a general term for dihydric alcohol, it would include 1,4-butanediol.

As to the dihydroxy compound B) having a temperature above 140°C in 1<sup>st</sup> stage and having a temperature of from 20 to 80°C in 2<sup>nd</sup> stage in **claim 8**, Janzen et al (DD 145540A) disclose the temperature of glycol from 20 to 160°C (claim 1 – DD 145540A), which would apply to both stages when there are two stages.

As to gas stream containing less than 20 ppm by weight of aromatic dialkyl ester A) after purification and cooling in **claim 9**, in view of the process disclosed by Janzen et al (DD 145540A), its purpose is to recover the DMT sublimate, therefore, it would contains less than 20 ppm after it runs continuous.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVES WU whose telephone number is (571)272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

Art Unit: 1797

Date: September 26, 2008

/Duane S. Smith/  
Supervisory Patent Examiner, Art Unit 1797  
9-26-08